THE HIGH SCHOOL JOURNAL

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PUPILS CAN READ

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FREQUENTLY we hear teachers complaining that "pupils can't read." Like most other absolute statements, this, of course, is not precisely true. Probably every pupil in high school today can read, but as any reading measurement of a class will show, there is a wide variation in reading ability even in one class. There are probably more pupils in high school classes who do not meet the teachers' hopes than those who do, as far as reading ability is concerned. But the point is that all hope for a pupil's future development in reading ability, say at the high school level, rests on what ability he already has. That must be the foundation upon which the pupil's future development in reading ability must rest. In longing for something better, we should not lose sight of the good which we already have.

But why is it that high school teachers do not find all they think they have a right to expect in pupils' reading ability?

SOME CAUSES OF DIFFICULTY

Just a few of the more obvious causes of reading difficulty will be mentioned here. The list is not at all inclusive. It is intended merely that the few suggested here may give the reader cause for thought.

A possible cause of reading difficulty may be found in the educational philosophy held by teachers and parents or in the type of education held by these to be worthy of their approbation. If those guiding and supporting an educational program believe that its degree of value corresponds directly to the hatred and distaste for

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it created in the pupils, then one may expect to find reading difficulties among the many other difficulties which such a program is bound to create. If the educational machinery is geared to failure and those running it hold that "standards" should be kept high by a goodly percentage of failure, then such machinery will be set in such a way that plenty of reading difficulties will be produced. Fortunately many schools have moved entirely away from such a philosophy and probably most have moved away from it to some extent. There is still plenty of it left, however.

One looking at the problem superficially might dismiss it with the suggestion, "poor preparation," meaning that the pupil has been poorly prepared. Such a general statement will not be helpful in improving the situation. Moreover, to cast aspersions upon the supposedly conscientious efforts of previous teachers merely complicates matters. The energy one may be tempted to spend in fault-finding will produce greater benefits if it is spent in looking for fundamental causes and methods of improving conditions in the present.

A powerful force in producing reading difficulties, however, is to be found in forcing the child into reading too early. The high school teacher can't do much about this directly, but it should be recognized. About as sure a way as can be found to produce reading difficulty in any child starting to school is to force him into reading before he is ready for it. Care and patience at the start is the obvious remedy.

A cause of difficulty which does operate all along the line, whether in the elementary or in the high school, is the use of reading materials which are too difficult for the pupils concerned. If the material is so difficult that every sentence is a struggle and defeat is frequently assured by a single word, we can expect little improvement in reading skill. Neither can we expect those pupils participating in such a process to develop much of a love for reading, and that is exceedingly important. The provision of reading materials of the proper difficulty for the pupils concerned would in itself go a long way toward rapidly improving reading skill.

Closely related to the problem of attempting to use reading material that is too difficult is the extremely limited supply of reading material available to pupils in many schools. Practice has improved quite generally over the old system of having a single book for a grade, and that a reader, but there are many pupils in schools today who are virtually on a starvation diet as far as reading materials are concerned.

Pupils may have such a limited experiential background that it will cause reading difficulty. Reading becomes merely a stunt to be performed and unrelated to the pupil's living. For a pupil to read of the Egyptians when he has stood in an Egyptian tomb and has seen articles made by them thousands of years ago is one thing, but to read of these without such actual experience is quite something else. And the trouble may not necessarily be with the experiential background. That background may be excellent for materials of a different type. While every effort should be made to extend the pupil's experience, possibly much changing should also be done simultaneously in the reading materials provided. Reading should extend the pupil's environment vicariously and should not merely seek to create it.

Reading is not merely a single general skill. There are various types of reading skill and the development of ability in one type may not do much to develop ability in another type. The pupil who can read a story with understanding and pleasure may have little success in following a set of precise directions even though the vocabulary involved may be even simpler. While good elementary reading instruction will seek to develop several of the more common types of reading ability, there are less common and more unusual types which should also be taught and these are best taught when there is actual need for them. If such a type of reading difficulty has not been developed sufficiently, then trouble is bound to appear if the problem isn't met directly and effectively when the deficiency is discovered.

The number of pupils in high school has been growing rapidly and steadily in recent years. Promotion rates have been going up in elementary schools. Many of our youth who, under former conditions, would have dropped out of school and entered employment are now forced to be in high school for the want of something better to do. These are trends deserving our approval but they do bring more reading difficulties to the high school teachers. They will challenge the ability of even the most capable teachers. Sincere, capable teachers will meet the challenge by improving their professional skill.

Finally, a small percentage of pupils with reading difficulties may have special deficiencies in their mental mechanisms. These can be merely mentioned here but there is an extensive literature of such deficiencies.

Some Hopes for Improvement

As soon as it is recognized that causes of reading difficulty may lie in certain practices or beliefs, direct attack upon the problem with hope of definite improvement becomes possible. There are many reasons why even more effective teaching of reading may be expected in the future. A few of the more evident reasons will be mentioned here.

A most basic reason for hope is to be found in the changing philosophy of education, and accompanying changes in practice, found in the schools today. The actual experience of living here and now is coming to be considered as of great importance in the educational development of the individual. Reading and other skills are considered as mere means to something better, rather than ends in themselves. With reading related to living, more hope of greater development in ability is possible.

Teachers are more and more inclined to accept the pupil with whatever ability he may have and give him as much help as they can on the level where he needs it, rather than to complain of the efforts of previous teachers or to threaten failure to the pupil. Pupils are bound to respond to such improved treatment with greater effort, and the effort put forth will produce greater results.

A great storehouse of hope is to be found in the vast and rapidly increasing literature concerning the nature of reading and the improved practices in the teaching of reading. Hundreds of studies in the field of reading have been made in recent years. Books and magazines are filled with such reports. Anyone wishing to improve his knowledge and skill in the field of teaching reading will find a wealth of material at hand. The Thirty-sixth Yearbook, Part I, on "The Teaching of Reading: A Second Report," published last year by the National Society for the Study of Education, should prove an excellent gateway to this wealth of material for any interested teacher. A class in the University of North Carolina* last summer which had access to most of the recent good books in the field, voted Betts' "The Prevention and Correction of Reading Difficulties" as the next most helpful book. The material is available if we but make the effort to get hold of it.

More and more educators and teachers are becoming interested in this accumulated information concerning the teaching of reading. Classes in the teaching of reading in professional schools for the training of teachers are most popular. Teachers in active service during the regular school year throng such classes in the summer

* This class was conducted by Mr. Baker, who returns this year as a member of the Summer School Faculty.

sessions. Teachers face to face with problems in the teaching of reading are working on the solution of those problems in the light of recent knowledge in extension and extra-mural courses. The work of the Extension Division of the University of North Carolina in assisting teachers on the job in solving their own problems is a move in the right direction and is most commendable.

Practice in the teaching of reading is actually improving, which is another source of hope. Unlike the man who didn't wish to learn any more about conducting his business because he was already not doing as well as he knew how to do, teachers are improving their practice and are at the same time wishing to know still more of further ways of improvement. Whole cities have embarked on organized programs for the improvement of the teaching of reading and the results of these efforts are appearing in the reading literature. Where remedial reading is necessary, it is more and more frequently becoming recognized in practice as the responsibility even of the high school, and special classes are being organized for the purpose.

Individual teachers are coming more and more to recognize that every teacher is a teacher of reading. The teacher of history or physics in the high school may recognize that one way to improve the pupil's success in the subject is to teach the pupil to read more effectively in that subject.

Progress is being made in the provision of a more abundant supply of reading materials for pupils in the schools. This increasing supply is, moreover, usually of widely varying difficulty, so the pupil whose reading skill hasn't yet reached a high state of development may find something which he can read with a reasonable degree of satisfaction to himself. In this respect only a beginning has been made, but the beginning is important. Once begun, the idea is bound to spread.

Just what the ultimate effect will be of the newer non-reading agencies for the dissemination of information is still problematical, but probably no one is yet ready to say that the movies, the radio, illustrated magazines, and "talking books" threaten to usurp the importance of reading skill in the very near future. At present, it is quite possible that some of these agencies should be considered as agencies assisting in the more rapid and effective development of reading skill. It has already been pointed out that the pupil's experiential background is of importance in the reading process. The movies and the radio are exceedingly effective means of extending the pupil's environment and for that reason should be considered

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*SCIENCE AND THE CHANGING CURRICULUM**

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IN RECENT years those of us who have been long in service have seen the rate of change in both educational theory and educational practice greatly accelerated. This acceleration has been due in part to a new understanding of child psychology, but even more to a by no means wholly successful attempt to keep abreast of rapid changes economic and social. As a result of both psychological research and these social and economic changes consequent upon the World War we have seen the beginnings of the shift from schools almost wholly subject-controlled, with relatively fixed academic programs which, though not entirely alike for all, were nevertheless largely within the college-preparatory field, to schools nominally child-centered and, more recently, society-centered, in which the chief objective is to adjust the child not only as an individual to his environment but as an individual with obligations to all his fellow-beings, especially within that environment where his life and work must be mainly cast.

In line with this change we have seen curriculum expansion, and innovations that have more and more sought to fit the school to the varying types of individuals that attend it rather than to fit those individuals to the school, or, failing to do so, to throw them out to develop as they may without our further aid. In these endeavors we have fallen far short of an ideal; yet we have, or at any rate think we have, at least succeeded in aiding a larger per cent of young people to adjust themselves reasonably well to life than was the case heretofore. And with greater breadth of opportunity given in the school, more varied groups are finding work that appeals to them and helps them in the right direction. The question of course remains as to how nearly we can find means of adjustment for *all* types. No other country has attempted such universal education; yet it is the American belief that a democracy—and this we hold to be the most desirable form of government now known—can succeed only to the extent that its citizenry is educated and exercises with wisdom and intelligence the privileges of governmental participation.

In recent years particularly we have seen the enlargement of opportunities along prevocational lines. We have come to acknowl-

* An address given before the Science Section of the North Carolina Education Association at Raleigh, March 18, 1938.

edge more frankly than before that there is a large group of boys and girls unfitted for the old type of academic work. Many of these, especially the boys, are satisfied only if they have tasks requiring bodily activity to occupy at least a part of their school time. Pupils of this type respond to formal instructional content that seems to supplement and have bearing upon these more active occupations, but have no interests in anything further in way of book study.

Coupled with these changes, and in line with our newer knowledge of the importance of individual differences, has come the rapid growth of the guidance movement, both educational and occupational. We are seeing with increasing clearness the need of knowing more about first, the pupil—his home and community background, his interests, his aptitudes, and the like; second, the occupations themselves—their requirements as to training and personality, the nature of their various tasks, the social position of their workers, the chances they offer for steady employment, and so on.

Again, we are beginning to realize both the need and the demand that exists for adult education, especially that of a practical nature. It seems probable that more and more will have to be done to meet this need as the years go on, at least for some time to come.

The leisure time or recreational aspect of education has come to increased prominence as machines have taken the place of human labor and working hours have been shortened. Allied to this is the health movement, especially physical training through games and increased attention given to mental hygiene. The need of sound bodies in which may dwell minds unwarped by preventable emotional strains that are detrimental is becoming more and more seen as an ideal, and toward achieving it greater efforts are being directed.

Then there are the new needs created by a changing external world. Courses in conservation of physical and biological resources, and of human life through accident prevention, especially on the highways, would not have been as necessary twenty or thirty years ago, for then we had relatively few of the now common electrical devices whose proper use we must today learn; then, too, the automobile and the concrete road were in their infancy, and the western frontier was still open. Similarly, the coming of better forms of transportation and communication, not only within the nation but between nations, has brought us into situations where we must look upon the whole earth, rather than an isolated continent, as our real social environment. No longer can we follow the advice once given to ancient Argos by the Delphic oracle, to "keep your head

within your shell." We must think in terms of world society and world events, whether we wish it or not.

Thus far I have been trying to present a picture of the new demands made upon the school as an institution, by a changing society. I should now like to mention briefly some of the trends of administrative change which it seems to me must ultimately grow out of these demands. In fact, many of the changes I shall bring to your minds are now being tried at least experimentally in one place or another.

Foremost in point of frequent adoption is the plan of making student activities a part of the curriculum rather than counting them as extra-curricular. The constituting of the student body a social unit for the transaction of business by groups or as a whole is designed to afford practice in citizenship; the presentation of programs of all sorts gives similar training in cooperation and in accepting responsibility, reveals qualities of leadership, aids in the discovery of aptitudes and special abilities, develops poise in the participants, encourages creative work, and makes for better use of the mother tongue, to mention but a few of its benefits.

Even within formal programs a far greater degree of individualization is permitted, in line with the findings of the guidance counselor. At the same time the attempt is usually made to make this work less artificial and more truly functional than under older plans. Opportunity is increasingly being given to work with real materials and to take part in real life activities rather than to experiment with toy models and to learn through artificial experiences. In this way education is being made more meaningful because more nearly true to, and often a part of, ordinary living. Unfortunately, as yet such education seems overmuch confined to too few fields of endeavor and to too few types of schools. As a rule such schools fall into two very different classes, (1) those identified with the Progressive Education movement, generally well supported financially, where this type of work is looked upon as an enlargement of opportunity for experiences, and (2) industrial schools of the orphanage or similar type, where this procedure is necessitated in some measure as a device for self-help as well as for training, since immediate use of products and services can be made and expenses can thereby be reduced. That the benefits of such practical programs have not been made accessible to other classes of pupils faster than they have, has always seemed to me a great pity, especially in so far as it gives training in one's assuming responsibility to the group of which one is a member.

Another trend is that toward a general integration of the curriculum, and a breaking down of the walls that divide knowledge into artificial compartments. Some school systems, for example that of our sister state to the north, have gone so far as to adopt a "core curriculum" in which apportionment of work is not based on subjects but upon broad functions of living, with centers of interest, appropriate to the pupil's degree of maturity, within these functions.

Still another tendency is that to capitalize community resources both physical and human, and to make the community the school laboratory. This has a twofold value: first, it permits study of life-sized problems—real problems—at first hand; secondly, it works toward school-consciousness on the part of the people of that community. Under such a plan of study, pupils sit less in classrooms, passively absorbing, or failing to absorb, knowledge from teacher or from book; rather, the classroom becomes a place for organizing and laying plans, as a result of which they go out to investigate one community problem or another, visiting to observe processes in operation, consulting city officers and other experts in various lines of activity, even in some places taking part, through some sort of cooperative plan, in the activities they are studying.

It is evident at once that any program such as this must involve a considerable breakdown of our hourly period schedule. It is equally apparent, probably, that in the investigation of many of these community problems there is opportunity, if not actual necessity, for cooperation between subject teachers. The investigation of the city milk supply, or the city waste disposal system, is just as appropriate to the social studies field as to that of science, and there would seem also to be present in such an investigation excellent material for the development of skills in English and mathematics, purposefully used. Many similar illustrations will occur to any teacher who carefully surveys his community in its various phases of life activity. Opposed to change in the direction I have suggested are those with particular subject interests, many of our own science group included. I often hear at science meetings the remark, "Yes, this idea of integration is good, but it all seems to center round the social studies. Why don't those folks integrate *with us?*" Opposed, also, is the tradition of an unbroken schedule of class periods, which would have to be seriously disturbed if students are to go out through the town or village to carry on lengthy investigations. However, other agencies, especially motion pictures and radio, for which groupings larger than separate classes must be arranged in most schools, if they are to be employed, are also tending to break down

program rigidity; this opposition, therefore, does not seem insurmountable by any means.

Up to this point I have discussed in rather general fashion, but with implications for science, certain adjustments of curriculum in line with world changes, and certain trends in general school administration, as these appear to me to be taking place. It is now time to turn more closely to our own field, that of science. How are we, as science teachers, going to adjust ourselves and our work to such new conditions as I have pictured, assuming that we shall ultimately have to meet them, regardless of how welcome or unwelcome they may be?

I might point out at once that within our own field ideas have also been changing. We have already, in our general science and general biology courses, become somewhat accustomed to disregard the old barriers between the several sciences as usually divided in college. Both the recognition of the need for functional, or "practical," courses and the new advances recently made in knowledge of the structure of matter have likewise tended to draw high school physics and high school chemistry closer together, sometimes even combining them in a single course under some such title as "senior science." Then, too, many of us have come increasingly to think of science more as a medium for cultivating habits of reflective thinking and problem-solving than as an almost interminable mass of facts to be learned. We will grant without delay that one must have facts to think about, and that in this complex modern world, full of inventions due to science, we need more factual knowledge than ever before, if we are to live efficiently or even to avoid the dangers which the presence of these inventions brings. Fortunately, however, the understanding of the great majority of them and of much else in our physical environment depends chiefly on our thorough mastery, to the point of habitual application in our thought, of relatively few great scientific principles, or generalizations. The same can be said for our biological problems. Once these principles are really mastered, by a process of deductive thinking, we can in most cases reason out appropriate courses of action. As for the multitude of facts, except for retention of those which we need in constant daily use it is much better that we should know how to get them when we need them than it is that we should try to carry them all in memory.

Our problem as teachers, therefore, becomes one of selecting for study such aspects of our environment as at the same time deal with facts and principles of enough importance to make their re-

tention worth while and also furnish practice and stimulation toward developing the methods and the attitudes of the true scientist. Someone has summed these attitudes up in the two words *curiosity,* to know the truth at all costs, discarding superstition and unsubstantiated rumor, and *caution,* exemplified in suspended judgment, willingness to change when new evidence demands change, not exceeding the evidence, and the habit of carefully evaluating sources of information, rather than of accepting indiscriminately whatever data or arguments are advanced.

Naturally, the more attention we devote to the reasoning and data-collecting processes rather than to book study, the more slowly we shall cover ground, especially at the start. If, therefore, we subscribe to this philosophy, we shall have to resign ourselves to the sacrifice of some of the informational content demanded in what we have up to now conceived to be a logical and well-rounded subject matter course. It is no doubt true, however, that the slowness of such work at the beginning is considerably offset by more intelligent and more rapid work later on.

I might digress here for a moment to bring into the picture the probable influence of the movement toward an increased amount of nature study and introductory science work in the elementary grades. If this work is well done, by interested and competent teachers, after a period of years we should have in the high school a set of pupils far better acquainted with physical and biological objects and phenomena than we find today, with the result that we shall have to take less time to dwell on the common information that occupies so prominent a place today. We may even expect those pupils to be more intelligently trained in their thinking concerning nature. But unfortunately we shall have to wait for some years, I fear, before we have the rank and file of our elementary teachers educated to direct science work really well. I find that in other regions besides our own, teachers are still prone to treat science as just another textbook subject, when really the only use of the book should perhaps be to supply information beyond what can be obtained by local observation and experiment, and this only when the need for it is actually felt.

Returning to our main line of thought: It would seem quite probable that if we are to make our sciences truly functional, we shall find some of the most promising courses taking the form of community or local studies of one kind or another—studies that when put together may represent as valuable a year of work as that done in the familiar, outlined type of course, if not actually worth

much more. For somehow we cannot help feeling, some of us, that much of what we are now doing in regular classes, and even in the laboratory, is artificial in its setting and quite remote from actual participation in the real thing. We work with small-sized models rather than with full-sized machines; we discuss plant or animal breeding, but do nothing that enables pupils to see practical applications in the selection of good poultry, dogs, rabbits, calves, hogs, or seed corn, to mention just a few possible opportunities, many of which are available in agricultural communities, surely. Happily, in much of our area, construction projects are not as yet surrounded, as in the large cities, with high broad fences and "Keep out!" signs, and many industrial plants are still small enough to admit visitors who come with right intentions. The erection of a new public building, or of a bridge upon the highway, let us say, offers all sorts of problems as to materials, costs, strength and safety, labor conditions. A study of the health safeguards of a community—its water supply, sewer system, garbage incinerator or public dump, fire protection, dairy and restaurant inspection, and the like—offers the best sort of scientific as well as civic problems. An up-to-date filling station is full of applications of principles of machines and of hydrostatics; and so the list could be continued.

I have already pointed out that the major difficulties in the way of such practical work are many. Chief among them may be mentioned the inflexibility of our present program of hourly classes, already dealt with; the traditional adherence to subject divisions by the teachers themselves, and their fear, or perhaps unwillingness, to change to something relatively new and unfamiliar that will require them to revise their philosophy or their habits; the influence of college entrance requirements; the difficulties of transportation to and from outside study locations; and possibly the conservatism of school boards and of parents, who are always wont to think in terms of the kind of schools they themselves attended a generation ago, and to look askance at innovations. Except so far as these influences affect the freedom of action of local professional school administrators, I do not look for opposition from that group; instead, I look for leadership along these or similar lines.

Another type of difficulty not present in all schools but of very frequent occurrence is the absence of any sort of shops within which pupils, especially active boys with little interest in book study, can construct working apparatus and models, or tinker with a full-sized piece of machinery, as, for example, a discarded automobile

engine. Such shops are much needed. Their fittings need not be elaborate. Externally they should not be allowed to become unsightly or disorderly, but they do need to be rough enough inside to allow for the kind of work that should be done in them. In some instances a part of their construction might even be done by the pupils themselves, perhaps. Coupled with the need of shops is the need for teachers with mechanical ability to direct work in them. A recently reported study (by G. P. Cahoon of Ohio State University) indicates that even many seasoned science teachers are extremely limited in both their ability and experience in using even the most simple and commonplace laboratory apparatus and tools.

Let me now recapitulate. We have found trends toward pupil-centered and social-centered schools, schools in connection with which work of vital interest is being done by young people on a full-sized scale. We have noted that this work, at its best, tends to cut across subject division lines and to receive its most happy treatment through the cooperation of various departments. We have even found whole curricula which discard subjects as such within the core required of all alike, making them only subsidiary to that core, the basis of which is the consideration of the major aspects of living. We have found the tendency to utilize the resources of the community to a new and unprecedented degree, and along with that, through personal work and guidance, to bring out and develop the resources that lie within each individual. Our psychology has taught us that the best learning results are obtained through putting our education in the form of problems, investigations, and experiments that continually face pupils with challenging questions that are really worth while, at the same time that these are graded so as to be within the power of those studying them to reach their solution to the point of satisfaction as the pupil sees it. We are faced with the necessity of disregarding subject matter arrangement and of cutting down on ground covering if we would put greater emphasis on problem-solving, investigating, and training in reflective thinking on practical questions. We have the opportunity to prepare our students for community living and for citizenship through study of various phases of that living as exemplified in the community itself. In such study we must arrange to work cooperatively with teachers in other lines if we are to serve our pupils best, and this means subordinating our ideas of continuing to give formal science courses, except secondarily, to those of rendering the highest social service in a school run according to

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DO OUR STUDENTS KNOW WHAT WE ARE TALKING ABOUT?

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STUART CHASE'S *The Tyranny of Words,* which was published in January, 1938, was written because the author discovered that intelligent people often did not know what they were talking or writing about. They were ignorant of the true meaning of the words they used with perfect ease and assurance. Mr. Chase has confessed that he himself was among the sinners.

If adults who have several significant books to their credit and who are listed in *Who's Who in America* admit that they are ignorant in the matter of vocabulary, what should we teachers of secondary school students say? For the sad fact stares us in the face after years of teaching that our pupils not only know not what they speak, but know not *what we speak.*

The efforts of workers in words have been heroic in recent years. Yet the fact remains that vocabulary deficiency is one of the most serious of all the shortcomings of boys and girls in our secondary schools. We rarely read of any educational conference in which some speaker has not lamented the verbal poverty of his pupils. Moreover, scientific studies have been made recently to determine the extent of the vocabulary of large numbers of students.

The results are not encouraging. One such test was given in 1935 to 21,738 pupils in 250 classes of 6B grade in the schools of New York City by Dr. Stephen F. Bayne, Associate Superintendent of Schools. Marked weakness in vocabulary was revealed. Only four of twenty-two school districts examined attained the nation-wide norm. One district scored a grade rating of 5A, and three others fell down to the level of 5B.

If New York City pupils, surrounded by all the cultural advantages of the great metropolis, make such a poor showing, what could be expected of other school areas, less advantageously situated?

In the Syllabus in English for Secondary Schools in the State of New York, published in 1935, it is stated that "among the causes for poor reading are physical condition . . . and poor word recognition."[1]

Educators in other fields are aware of the deficiency in English of the general reader long out of school. Professor Alfred North

[1] *Syllabus in English for Secondary Schools,* Albany, 1935, p. 19.

Whitehead of Harvard University, speaking at a convention of the eastern division of the American Philosophical Association on December 29, 1936 on the vagueness in contemporary philosophical writings declared:

"One source of vagueness is the deficiency of language. We can see the variations of meaning, although we cannot verbalize them in any decisive, handy manner. Thus we cannot weave into a train of thought our perceptions and conceptions. Conventional English is the twin sister of barren thought."[2]

Mrs. Franklin D. Roosevelt, while inspecting Camp Jane Addams in Suffern, New York, "stopped before a collection of visual teaching aids and observed that reading was becoming almost a lost art. This led her to the thought that 'we are not giving people a vocabulary in our public schools'."[3]

Though this deficiency in vocabulary exists on a nationwide basis, the demands for a precise, extensive, and comprehensive vocabulary are more urgent than ever. Newspapers abound in words which even college graduates find difficult. From recent issues of *The New York Times,* these words were selected for their difficulty:

ventose
postliminary
supererogation
coadjutor
fissiparous
acrimony
abrogation

How many of the 791,161[4] readers of the *Times* understood the meanings of all of these words? A single test carried out by the author will demonstrate the widespread ignorance of newspaper language. A headline on the sports page of the *Times* of March 23, 1937 read,

ACRIMONY MARKS
DODGER-RED GAME

A class of thirty-nine boys in the fourth term, with general averages of over 90%, were asked to define the word *acrimony.* Eight wrote "I don't know." Nine gave the correct answer, "sharpness or bitterness in temper, language, or manner."[5] Twenty boys gave incorrect definitions which follow:

1. It is a mark which makes it easier for one to understand something.
2. Pertaining to the same level.
3. Treason, passing information.

[2] Quoted in *The New York Times,* December 30, 1936.
[3] Quoted in *The New York Times,* July 9, 1936.
[4] Circulation as announced on April 2, 1937, p. 26.
[5] E. L. Thorndike, *The Thorndike-Century Junior Dictionary,* New York, 1935, p. 9.

4. Marks which separate two different competitors in an announcement.
5. Score or proportion between two contestants.
6. Keenness or excitement of the game.
7. A time or date by which things are known to happen.
8. Keen inclination to study what he is interested in.
9. A word that tells who is doing something.
10. Something marked against a person.
11. The name given to the score of a game.
12. Write-up in column of newspaper.
13. Something that is going to happen in the future.
14. Nothing good, no interest.
15. Outstanding player's action.
16. Athletic competition.
17. Sourness.
18. Pinching pennies.
19. Schedule.
20. Poor reputation.

Only about one-fourth of these superior students had any idea of the meaning of the word. How would they have fared with some of the difficult words in some recent best-sellers? In Robert J. Morris's *Fifty Years a Surgeon,* we find such words as:

armamentorium
phagocytes
opsonins
purulent
saprophytes
hyperleucocytosis
pyosalpinx

This is not a book for the medical profession but for the average reader.

How many average readers understand the words above? Everywhere, to-day, in newspapers, magazines, books, radio talks, motion pictures, and legitimate plays, we are confronted with difficult words. Those who fortunately know them can appreciate the author's meaning. A small percentage remember the troublesome words and consult the dictionary later. The vast majority prefer to ignore them and go on through life having only vague notions of the meanings of words and knowing exactly the meanings of a relatively small percentage of the words in the English language.

The case, however, is not hopeless. Development of a large and exact vocabulary is possible, provided one wishes to expend the required effort. While it is true that no amount of practice can make a violin virtuoso out of one who is tone-deaf, improvement in vocabulary is practically assured to those who are willing to learn.

Titans in vocabulary like Woodrow Wilson, Theodore Roosevelt, Macaulay, and Pater did not inherit their command of words. They

acquired it. It is up to the teachers of English to discover ways and means of bringing about a decided increase in the vocabularies of their charges. In our effort to develop the artistic capacities of our pupils, under the influence of such inspiring teachers as Hughes Mearns and his school, we have forgotten that many boys and girls who are not gifted in the use of words simply do not understand what we are saying.

In her article in the February *Forum,* Mrs. Mary Colum, in discussing the Abbé Dimnet's *My Brave New World,* makes the astute remark that one of the most difficult feats in the whole field of mental activities is to communicate the thought of one person clearly to another. Yet communication, as we have preached for so long, is the very business of language. Too often we have not stopped to realize that we are not communicating at all. Our students have the haziest notions of what we are trying so earnestly to explain even while they are in the classroom. What will they remember that evening, or when the examination comes around, or five years later?

Many college graduates who have been critical of college examinations have often found fault with that type of examination which compelled them to give back in a reasonably correct fashion the ideas which their instructor had given them on the subject for the past term. Many have been the imprecations against a system which made mere parrots of these "independent thinkers" and future pillars of society. Yet that system was not all the horrid thing it is made to appear in a clever article written for a popular magazine. The professor, out of simple courtesy, to say the least, has the right to know whether his ideas, over which he has spent his time and effort, are being received as he expresses them. Do his students hear what he is saying, or something far removed from the truth as he sees it? If our iconoclasts want to destroy other systems, they may be permitted to take a special examination in which they will be marked on the originality and the clear expression of their own ideas. But an examination should certainly be given on their power to remember ideas of others clearly and with reasonable accuracy.

Teachers of secondary school English have taken too much for granted when they have assumed that their students really understand them when they give their assignments, when they are explaining the ideas or thoughts in a difficult poem, when they are commenting upon the plot of a novel or short story. Let them take nothing for granted! Let them but stop a moment to question

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GUIDANCE THROUGH AN EXTRA-CURRICULAR PROGRAM

WALTER CONRAD
Chapel Hill High School

JUST as the extra-curriculum was long neglected in the school as an educative force, so today it is being neglected as a means of guidance. The majority of schools today have extra-curricular activities, and some guidance is furnished through most of these programs, but it is guidance of the incidental type. It has come entirely by chance.

If guidance has resulted from such programs without conscious effort on the part of the planners, it is indication enough of what might be accomplished with purposeful planning for guidance. The extra-curriculum is a fertile field for real work. Its guidance possibilities are as yet almost completely unexplored.

In a good guidance program, students are provided with information and situations which will make them competent to judge values for themselves, to solve problems which they may face in life, and to make choices which will provide for optimum achievement. Guidance, properly speaking, is consequently not leading or directing students, so much as it is fitting them to choose wisely. What could furnish a better laboratory for such training than the extra-curriculum, for through the activities of such a program students are given every opportunity to experience real learning situations which are meaningful.

What better place for health guidance could one find than the athletic activities of the school? On the football field, the basketball court, or the baseball diamond—at all these places the student learns to care for his physical needs. He strengthens his body and guards against injury, but if injury comes, he is prepared to care for himself or to help an ailing teammate. He learns through the training program what is best for his health, and how to build up a strong resistance to disease. If the athletic program is not overemphasized, he learns how to participate in physical exercise with moderation rather than to overtax his strength.

If the sport is one like tennis, handball, or golf, he receives valuable leisure time guidance. Every student in our secondary schools and colleges should learn some sport in which he can participate throughout the rest of his life. Furthermore, there is no better opportunity for real training in sportsmanship and in acquiring a sense of fairness.

Civic, social and moral guidance come through such groups as Boys' and Girls' Hi-Y clubs, Girls' Reserves, Boy Scouts, and Cotillion clubs. In social groups, such as these, children learn to work together for worth-while ends. They should develop projects for community, school, or home improvement, working the plans out by themselves, making and correcting their own mistakes, just as they will have to do in later life. There should always be advisers present to give information when it is needed, but they should remain in the background, giving as much freedom as possible to the students.

School parties and entertainments should be held which will enable students to become accustomed to the company of the opposite sex under conditions which are natural and conducive to an easy relationship. How much less social maladjustment would result if schools provided more opportunities for healthy, normal relations between boys and girls while they are still in the formative social stage. They would be far less liable to choose companions of the wrong sort in later life.

Through hobby clubs (woodcarving, metal work, weaving, and knitting) students receive guidance in worthy use of leisure time, and perhaps some guidance of a vocational nature. Much of the crime committed today is committed by people who never learned how to use their free time in a wholesome manner. Leisure time should be occupied with something interesting enough to give one rest or relief from regular tasks. Hobbies will aid in accomplishing this purpose.

Guidance of a vocational nature may well be found in 4-H clubs, Music, Dramatic, Art, and Journalistic organizations. 4-H clubs are definitely valuable to students who are contemplating farming as a life work. Girls in these clubs work out projects in cooking, canning, dress designing, home furnishing, and gardening, and boys have projects in the breeding of livestock, home planning, and crop improvement. These are projects of such a practical nature that they constitute definite vocational guidance.

It would be interesting to know how many radio, stage, and screen stars have discovered their talents in school orchestras, bands, glee clubs, or dramatic groups. Lucielle Browning, contralto of the Metropolitan Opera Company, developed her first interest in operatic music through participation in an extra-curricular activity, the glee club of the Durham High School. Talent and interests found so early can be developed without the loss of valuable time, which means so much in one of the artistic professions. Even if one is not

so talented as to be able to make a profession of his work, he will have developed an intelligent interest which will provide him with much entertainment and enjoyment for the enrichment of his life.

And while a student may not step directly from a school newspaper to a professional newspaper staff, his work on a school paper may lead him to investigate the possibilities of journalism as a profession, and may make him more capable of deciding whether he has what is necessary to make a success in this field. After all, if an activity can do that, it is providing guidance!

The values of membership in a Student Council are quite obvious. For training in leadership and democratic ideals, no better opportunity is available than representing other students as a Council member. A good leader is one who not only formulates policies, but one who listens to the suggestions of those whom he represents, and follows their desires as far as it is wise. The School Council provides this opportunity.

An extra-curricular program, if carefully planned and efficiently administered, can take over a part of the job now done by exploratory courses. Extra-curricular activities may include much subject matter content, and through participating in various types of activities, students may become familiar with occupations and courses of study to the extent that they will take a great interest in some vocation and investigate its possibilities. They will then plan their courses of study around their vocational interest, and consequently all their subsequent work will be more meaningful to them.

The fundamentals of the good extra-curricular program are: (1) children participate only in those activities in which they have an interest; (2) they have the benefit of expert advisers in those activities which they may choose; (3) they have a great deal of freedom in planning the projects they work out; (4) they make whatever choices are to be made by and for themselves. These fundamentals are essential elements of guidance, and full advantage should be taken of the possibilities they present.

STIMULATING VOCATIONAL INTERESTS THROUGH THE TEACHING OF CIVICS

FRANCIS N. AHL
Glendale High School, Glendale, California

ONE OF the major tasks of the modern high school is to help its members to find their vocational interests and to develop those interests. Occupations were never so varied as they are today. Careful guidance, counseling and advice are necessary if youthful citizens are to be directed to those vocations best suited to their capacities and interests.

Many of our schools today, recognizing the need for special training in guidance, have established full-time guidance counselors. Some schools hold "career days" and invite outstanding men and women in chosen vocations to talk with the students and to answer their questions about the work in which they are most interested.

But if we are to carry on to best advantage a program of vocational guidance, every teacher must realize and assume her responsibility to become in some measure a guidance counselor. Perhaps no teacher has a better opportunity to foster the work of guidance than the teacher of Civics.

After spending several weeks studying the selection of a vocation and analyzing the opportunities offered in the trades, in the professions, in business and in government service, each senior in our Civics classes prepared a paper on the question of "Choosing His Life's Work." He listened to radio programs on the subject. He searched for newspaper comments, magazine articles, and book references. Wherever possible he held interviews with people well established in his chosen field of investigation. In some instances he tried out the occupation by getting work in it after school hours, on Saturday and during the holiday vacation.

In one class more than twenty different occupations were selected. Each student started his paper with a statement of his reasons for making his choice and a description of the chosen vocation. Here was revealed a depth of interest and scope of understanding that speaks well of the younger generation.

One boy plans to be a geologist. He introduced his subject by the quotation from the Hebrew prophet: "He stood and measured the earth and the everlasting mountains were scattered, the perpetual hills did bow: His ways are everlasting." Then he went on to say that for the past three years he had cultivated a deep in-

terest in the natural formation of the earth; on several trips he had examined the mineral substances found in rock, and the causes for these formations.

Another student selects cinematography. He writes: "For the past ten years our family has been connected with the motion picture industry. I have spent a good deal of time at the studios, and therefore I feel that I have considerable knowledge concerning the picture business and the people in it. I feel as though I were one of them, and I have grown to like their fast idiotic life which is void of monotony . . . Camera work has attracted me because a cameraman does not spend his day in an office behind a desk. While behind the camera he is constantly making new and interesting acquaintances. I say interesting because picture people are interesting, and foreigners of note are constantly being shown through the studios."

A sixteen-year old girl who has chosen music for her lifework already plays four different instruments including the piano and the violin. She lists clippings of the Philharmonic orchestra concerts initiating a Brahms' cycle. The work of Otto Klemperer and Jascha Heifetz, of Volya Cossack and Tito Schipa is familiar to her.

Another selects costume designing because she "likes the designing and moulding of a piece of fabric into a gorgeous creation." The desire to create with her own hands and to express beauty has always been one of her highest ambitions.

The advantages and disadvantages of the chosen vocations were carefully weighed. The students analyzed the vocations and they analyzed themselves. They were as frank in mentioning their individual shortcomings as they were in lauding their abilities. A number of them commented that they had found the history of their particular vocation interesting and valuable as they had not known very much about it.

Such study and research in the choice of a vocation stimulates interest in the biggest job of our schools. It helps youth to self-improvement in their chosen fields. It aids them to think carefully and to draw conclusions in regard to the type of work which attracts them most and in which they are most likely to find success.

The Business Education Column

Conducted by G. H. PARKER

THINGS DETERMINED IN BUSINESS EDUCATION

SINCE the introduction of business education into the curriculum of the secondary schools, and because of its rapid growth and expansion, there has been a great deal of thought, study, and research devoted to this phase of the high school program on the part of school administrators as well as teachers of business subjects. In fact it is said that in recent years there has been more research carried on in the field of business education than in any other field.

As a result of this study and experimentation, coupled with actual experience and practice, it is felt that there are a number of considerations in connection with this program that are quite well fixed, settled, and determined upon.

1. The objectives of business education, aside from the broad objectives of general education, seem to be quite well determined and agreed upon as being twofold; (1) vocational education, and (2) social, personal-use, or consumer education. These objectives it can safely be said are not in opposition to each other, but rather are complementary and complimentary. A complete vocational program not only gives the vocational student a broad, comprehensive training, but business education must also meet the needs of the individual as a consumer and as a citizen.

2. It is quite well established that the vocational program of business education should not merely adhere to the traditional subjects of shorthand, typewriting, and bookkeeping, but that it should provide opportunities for preparation for other types of occupations, chief among which are selling, clerical work, and machine operation, these offerings to be determined upon, of course, by the commercial employment opportunities in the school service area.

3. The "dumping ground" stage of business education is past. The business department now has students of the highest type both as to scholarship and personal qualities. This does not mean, however, that all attention is focused upon this type of student. The business department must adapt its content, subject matter, and

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The Mathematics Column

Conducted by H. F. MUNCH

MANHANDLING AN EQUATION

ERNEST L. MACKIE
University of North Carolina

AS SOME recent articles in this JOURNAL have emphasized, one of the primary objectives of any subject which is taught with the purpose of educating should be to get the student to think, and to think logically. This applies surely at least as much to mathematics as to any other study, and I should like to make an appeal for greater emphasis on this phase of our teaching.

As illustrations of what happens as the result of illogical thinking, or probably better, from a lackadaisical method of attempting to solve a problem without the application of thought, I listed the errors occurring in one of my freshman sections some time ago in solving an easy linear equation in two unknowns for one of these in terms of the other.

It seems that the concept of an equation should be simple, and that a student should be easily convinced as to what is legitimate and what is illegitimate in handling it. Since the two sides of the equation are balanced, if he thinks at all, he should feel disturbed if he adds 2 to one side, or multiplies it by 3, say, and leaves the other side blissfully at ease. And the feeling of equilibrium should be upset if he divides *one term* by a number without dividing *all* the terms by the same number. But the particular class I am speaking of was unusually immune to such disturbances.

The particular problem assigned to this class of twenty-two students was to solve

$$y = \frac{3x - 2}{3}$$

for x. Only twelve of them did it correctly, and below are outlined the actual mistakes that the other ten made. In each case, the work was continued until some expression for x was found, but in what follows it is not carried beyond the mistake.

1. $3y = 3x - 2,$
$3x = 3y + 2,$
$x = y + 2.$ (Failure to divide throughout by 3.)

2. $3y = 3x - 6.$ (Failure to multiply throughout by 3.)

3. $3y = x - 2.$ (Several illogical mistakes here.)

4. $y = \frac{3(3x-2)}{3} = 3x - 2.$ (Only one side of the equation was multiplied by 3.)

5. $3y = 9x - 6.$ (The left side of the equation was multiplied by 3, the right by 9.)

6. $3y = 3x - 2,$
$3x = 3y - 2.$ (Mistake in sign, common in transposition.)

7. $3y = 3x - 2,$
$x = \frac{3y-2}{3}.$ (Mistake same as that in 6.)

8. $3y = 3x - 2,$
$3x = -3y - 2,$
$x = y - 2.$ (Bad mistakes, both in transposition and in dividing the equation through by 3.)

9. $3y = 3x - 2,$
$x - \frac{2}{3} = y,$
$\frac{1}{3}x = y.$ (Mistake in considering $-\frac{2}{3}$ as a coefficient of x.)

10. $3y = 3x - 2,$
$3y - 3x = -2,$
$3x = -\frac{2}{3y}.$ (Very little thinking manifested.)

If we could get students in high school to see clearly that the golden rule for equations is "Whatsoever ye do to one side of an equation, do ye also to the other side," surely when they become college freshmen, they would not be guilty of such frequent mistakes. In particular, the sins occurring in transposition might be somewhat lessened, if we emphasize that what is called transposition *is not carrying a term from one side of an equation to the other and changing its sign, but is always obtained by adding or subtracting the same term from each side of the equation.* Thus, in

$$3x - 2 = 3y \qquad (1)$$

we obtain

$$3x = 3y + 2$$

by adding 2 to each side of (1), not by transposing the 2 over and changing its sign.

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SAMPLES OF GOOD EDUCATIONAL MEASURING INSTRUMENTS

A. M. JORDAN
University of North Carolina

STANDARD tests are useful for diagnosis, prognosis, or comparison. In diagnosis a test helps the teacher analyze the source of difficulty so that the laws of learning may apply in learning a narrow habit rather than a broad one. Practice is then furnished at the point where needed. In prognosis, a test is used to foretell the probable success of a person in a course before he takes it. Such tests have been useful in prophesying success or failure in mathematics and Latin. Comparisons while at times odious are nevertheless healthy. In standard tests the figures used for comparison are based on averages of large numbers of persons and hence are not subject to the vagaries of the single class. There are other uses also.

The tests here listed are proven instruments of measurement. The list is small so that a busy executive or teacher can come to a decision quickly. The writer would be glad to correspond with anyone about his testing problems.

As a service to the state the University of North Carolina maintains at Chapel Hill a test distribution center in its Bureau of Educational Research, through which may be ordered, at the same price as is charged by the publishers, any educational test or scale published by firms that arrange to operate through regional distributing agencies. Only the most reliable and the most valid measuring instruments are carried in stock, although other standard tests can usually be supplied on two weeks' notice.

SAMPLES OF GOOD MEASURING INSTRUMENTS

INTELLIGENCE

Individual—Stanford-Binet, First or Second Revision. Houghton Mifflin Co., 2 Park St., Boston, Mass.

Junior High School

Group—Terman Group Test of Mental Ability. World Book Co., Yonkers, N. Y.

Otis Self-Administering Tests of Mental Ability, *Intermediate Examination.* World Book Co.

Senior High School

Otis Group Intelligence Scale, *Advanced Examination.* World Book Co.

Otis Self-Administering Tests of Mental Ability, *Higher Examination.* World Book Co.

Interest Inventories

Miner: Analysis of Work Interests. C. H. Stoelting, 424 N. Homan Ave., Chicago, Ill.

Strong: Vocational Interest Blank. Stanford University Press, Stanford Univ., California.

Garretson and Symonds: Interest Questionnaire for High School Students. Bureau of Publications, Teachers College, New York City.

Lehman and Witty: Play Questionnaire. Ohio University, Athens, Ohio.

Achievement

General—Sones-Harry High School Achievement Test. World Book Co.

Iowa High School Content Examination. Bureau of Educational Research and Service, Extension Division, The State University of Iowa, Iowa City, Ia.

Art—McAdory: Art Test. Psychological Corporation, 522 Fifth Ave., New York, N. Y.

Meier-Seashore: Art Judgment Test. The State University of Iowa.

Commercial Subjects—Blackstone: Stenographic Proficiency Tests. World Book Co.

Elwell-Fowlkes: Bookkeeping Test. World Book Co.

Thompson: Business Practice Test. World Book Co.

English—Cross: English Test. World Book Co.

Hudelson: Typical English Composition Ability Scale. World Book Co.

Leonard: Diagnostic Test in Punctuation and Capitalization. World Book Co.

Cooperative Tests in English Usage, Literature Acquaintance, and Literature Comprehension. Cooperative Test Service, 500 West 116th St., New York City.

Latin—Orleans-Solomon: Latin Prognosis Test. World Book Co.

White: Latin Test. World Book Co.

Cooperative Latin Test. Cooperative Test Service.

Mathematics

Columbia Research Bureau Algebra Test. World Book Co.

Orleans: Algebra Prognosis Test. World Book Co.

Cooperative Tests in Algebra and General Mathematics. Cooperative Test Service.

Iowa Unit-Achievement Tests in First-Year Algebra. The State University of Iowa.

Columbia Research Bureau Plane Geometry Test. World Book Co.

Orleans: Geometry Prognosis Test. World Book Co.

Schorling-Sanford: Achievement Tests in Plane Geometry. The State University of Iowa.

Mechanical Aptitude

Stenquist: Mechanical Aptitude Tests. C. H. Stoelting.

Detroit: Mechanical Aptitude Examination. Psychological Corporation.

Minnesota: Tests of Mechanical Abilities. Psychological Corporation.

Modern Foreign Language

American Council *Alpha* and *Beta* Tests in French, German, and Spanish. World Book Co.

Columbia Research Bureau Tests in French, German, and Spanish. World Book Co.
Cooperative Tests in French, German, and Spanish. Cooperative Test Service.

MUSIC

Kwalwasser-Ruch: Test of Musical Accomplishment. The State University of Iowa.

READING

Iowa Silent Reading, *Advanced Test*. World Book Co.

SCIENCE

Biology—Presson: Biology Test. World Book Co.
Ruch-Cossmann: Biology Test. World Book Co.
Cooperative Biology Test. Cooperative Test Service.
Chemistry—Glenn-Welton: Chemistry Achievement Test. World Book Co.
Powers: General Chemistry Test. World Book Co.
Cooperative Chemistry Test. Cooperative Test Service.
General Science—Ruch-Popenoe: General Science Test. World Book Co.
Cooperative General Science Test. Cooperative Test Service.
Physics—Columbia Research Bureau Physics Test. World Book Co.
Cooperative Physics Test. Cooperative Test Service.

SOCIAL STUDIES

American Council Test in European History. World Book Co.
Columbia Research Bureau American History Test. World Book Co.
Cooperative Service Tests in American, European, Ancient, Medieval, English, and World History. Cooperative Test Service.

PERSONALITY

Bell: Adjustment Inventory. Stanford University Press.
Bernreuter: Personality Inventory. Stanford University Press.
Haggerty-Olson-Wickman: Behavior Rating Scales. World Book Co.

TWO GOOD BOOKS ON TESTING

Bingham: Aptitude and Aptitude Testing—Harper's.
Fryer: Measurement of Interests—Holt.

PUPILS CAN READ

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as possible aids in developing greater reading skill. The pupil who has seen some happening in the movies, or has heard some item discussed on the radio, may well be stimulated to seek further and more interpretative information in reading materials. Moreover, the experience gained through the movies or the radio may give greater meaning and appeal to that which is later read.

One more hope for improvement in the teaching of reading is the establishment of reading clinics, or guidance clinics in which reading deficiency is studied as a possible cause of pupil difficulty.

Many of these have been established in connection with schools of education and with public school systems. They are of value not only to those who are treated in them, but also to those who direct them. Information gained through experience in them will be of use in future work. It is in such clinics that those whose mental mechanisms seem to function with pronounced deviation from the so-called normal—and they are a relatively small group—can be given special help.

Looking Forward

The reader who has persisted to this point must have considerable interest in the improvement of pupils' reading ability and may be ready for a few final words of encouragement. Recognition of the principle that every teacher is a teacher of reading is exceedingly important. Following this, it is important to discover where the pupil is in skill and attitude toward reading, then proceed from there. The progress made by the pupil up to the present in skill and attitude is far more important than any deficiency he may have. Future improvement must be based upon what has already been achieved.

Those teachers who wish to be of greater assistance to their pupils who need it, may well pick out some one problem in the beginning and seek to find as much assistance as possible in the literature on the improvement of reading. Such a particular recognized need will give increased meaning to that which is read in the field and more rapid progress will be possible. Interest, recognized need, purpose, and, finally, consistent application to the solution of the problem, will rapidly bring the day when pupils can read even better than they do at present.

SCIENCE AND THE CHANGING CURRICULUM

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a new type of program that is guided by ideals of youth development rather than by courses, hours, and college preparation. We may indeed still possess the opportunity to stimulate interest in the sciences as such in the form of hobbies, and to work, so far as time and strength will allow, through special subsidiary science courses aligned according to the interests developed. Under such conditions these optional groups will probably work much farther, because of their select nature, than do most of such groups today, and the work done will be more realistic.

I am well aware that in visioning this new type of school as the average rather than the exception I am taking a long look ahead.

On the other hand, very many, perhaps the majority of us, feel that the schools of today are not accomplishing what we could wish, or what the general public has come to expect. Change is greatly needed and is already being made; and, unless I am greatly mistaken, made in such directions as I have indicated. I suppose that as individuals, we, like teachers of other subjects, will vary in our reactions to that change, some working enthusiastically toward what seems to them to be the promise of a better day in education, others giving ground reluctantly as old props are undermined and old supports swept away.

My purpose, then, this afternoon has been to present a picture for your consideration. As individuals you may disagree with the portrayal, some challenging its truthfulness as a whole, others dissatisfied with details here and there. In such cases of difference it would seem to rest with each of you to redraw the picture, not to your liking, necessarily, but according as you foresee that changes will alter it, for a picture of some sort there must be if our teaching and planning are to be in any way purposeful. The one great question that then remains—a question which none of us can escape—is that of determining where we, personally, stand with relation to it, and along what lines we are ready to work wholeheartedly toward making our vision, whatever it may be, a reality.

DO OUR STUDENTS KNOW WHAT WE ARE TALKING ABOUT?

(Continued from Page 169)

twenty of their students. They will be surprised to find sometimes as many as ten different versions of the things they have just carefully and painstakingly said. We have only forty minutes a day to influence our pupils, but their environment outside of our class is far too powerful for us to combat. If they read a tabloid newspaper, the students do not read English but a lingo that is as strange to the Briton or Australian as Icelandic is to us. The radio does have some excellent speakers occasionally, but the programs they give are not listened to by the vast majority of youngsters. They want the Gang Busters, the Goldbergs, the Jack Bennys and the Joe Penners. Not that all of these are not to be thanked as entertainers.

Is the problem incapable of solution? Not if the teachers of English are given the opportunity of discovering the individual difficulties of each pupil. There are ways of learning the present stock of words of each student, as well as his capacity of increasing it. Periodic tests should be given to determine the progress made.

There should be frequent interruptions on the part of the teacher to ask the simple questions, "Do you understand what I mean?" and when answered in the affirmative, to ask again, "What do I mean?"

All this talk about educating to uphold Democracy, the Constitution, Tolerance, and the Love for Beauty is so much wishful thinking unless our pupils understand what we are teaching them; and if the truth must be told, they do not.

THE BUSINESS EDUCATION COLUMN

(Continued from Page 175)

instruction to the successful learning and improvement of the students of less ability as well as provide for the development of the powers of those students of superior capacities.

4. Due to the superior type of students taking the business course, to the improvement in the preparation given these students, and to the closer co-operation between the business men and the high school, the business men of the community are depending more and more upon the business department of the high school for their commercial workers.

5. Business education has not only been accepted as an integral and permanent part of the secondary school program but as a very vital and important one. Its status is on a par with that of any of the other departments, and all indications point to the continued growth and expansion of this phase of secondary education with its accompanying opportunities for a larger and better type of service.

In view of these considerations, business teachers must realize and accept their responsibilities. They must realize that business education is part and parcel of the larger whole; that business education, as all education, must be directed to the future needs of all the people; and they should co-operate and seek the co-operation of administrators and other teachers in furthering the entire program to the end that all may have life and have it more abundantly.

THE MATHEMATICS COLUMN

(Continued from Page 177)

In general, it is essential, that the student understand the kinds of operation with which he is to deal, and then that he apply logical thinking in handling them. Then he would not do as one of my students recently did in solving

$$\sqrt{x+5}=3.$$

His solution was:

$$x+5=\sqrt{3},$$
$$x=-5+\sqrt{3}.$$

BOOK REVIEWS

General Biology Study Book. HOLGER H. VAN ALLER and DOROTHY VAN ALLER. Globe Book Company, 1937. xi + 181 pp. $1.00.

Designed to direct pupil activities toward a mastery of fundamental biological principles through integrated use of library and laboratory, this little book presents an attractive and rather unusual approach to the general subject. The authors have definitely broken with tradition in subordinating knowledge of details to comprehension of major relationships, developed, of course, through exercises with concrete material.

The plan of the book makes for flexibility as to individual rate of work, throws the responsibility for preparation primarily upon the student, and encourages wide reading in place of adherence to a single textbook. The provision of such reading and of specific page references is left to the particular school and its biology teacher. It is assumed that a part of a student's training will be to find at least a portion of his own needed references.

To the teacher working in a school with a reasonably good library, who is not satisfied with the single text or the traditional stress upon structural details (and most progressive teachers are not), this study book will definitely appeal, both as timesaver and frequently as guide in organization.

The form is that of an ordinary book designed for repeated use; not that of a workbook. The student is counseled to make his own neat and comprehensive notebook as he goes along.

C. E. P.

A School In Transition. SAMUEL E. BURR. The Christopher Publishing House, Boston, 1937. 210 pp. $2.80.

A case study of the Congress Ave. Public School of Glendale, Ohio during three years of transition from traditional practices to the activity plan of progressive education, under the author's guidance. Originally presented as a doctoral dissertation, and here reproduced with slight changes. The school, a rather small one, covered secondary as well as primary grades, but the report covers too short a time to allow for full extension of the new program to upper levels.

The value of this study lies more in the clear presentation of the problems to be faced in conducting such a program change, and in the summary of work of others along this line to date, than in the specific manner in which details were here worked out. In some respects the community and the school were unlike the average. Yet the author feels that if proper account is taken of the needs and conditions of each individual community, a change can be made successfully and advantageously in any school, provided that the project has whole-hearted support.

C. E. P.

Aptitudes and Aptitude Testing. WALTER VAN DYKE BINGHAM. Harper and Brothers. 1937. ix + 390 pp. $3.00.

The vocational counselor will find in this new book of Dr. Bingham's great assistance in his work. In the one volume appear critical evaluations of specific tests, standards by which to judge tests, and trait requirements of the various occupations.

The importance of using tests as precision instruments in connection with vocational guidance is clearly demonstrated. For one thing, good quantitative tests show that a person may have one trait as much as three times more strongly developed than another. Thus he may be much more likely to succeed in an occupation which uses constantly this stronger trait than in others which draw equally often upon those more weakly developed. Consequently it is put squarely up to the counselor to know both the traits demanded in the various occupations and the amounts of those traits possessed by any particular individual. Secondly, tests show that great differences exist between individuals in any measured trait. Although this has been longer known and better understood than the preceding point, it is none the less important.

Tests of intelligence, interests, and specific aptitudes furnish the most useful data for such work. Occupations vary profoundly in their demands upon intelligence. Since the minimum intelligence requirements for many occupations are given in this volume, it is possible for the counselor, through use of any well known test, to determine whether the person examined is intellectually able to succeed in one or another of them. But without interest, intelligence hardly has a chance to manifest itself optimally. Knowledge concerning the interests of an applicant, gained through interest questionnaires supplemented by inspection of his past record and ratings by capable persons who know him, therefore aids the counselor in giving guidance with a greater probability of a happy outcome. And finally, tests of special aptitude are needed for reasons mentioned in the preceding paragraph.

Occupations, too, are here classified, and the general trend of employment of each type is clearly shown. In the appendix is published for the first time the "Minnesota Occupational Rating Scales," in which each occupation is rated on abstract intelligence, mechanical ability, social intelligence, musical talent, and artistic ability. These rating scores furnish the amounts of these five traits judged desirable by competent persons for success in that occupation. A banker, for example, needs a great deal of abstract intelligence, very little musical, artistic, or mechanical ability, but a considerable amount of social intelligence.

Those interested in the guidance of youth will find a mine of information in this book. Its tone breeds confidence, for it is measured. One sees here the outcome of long years of work by a distinguished author who now shares with us the fruits of his experience.

A. M. J.

A Humane Psychology of Education. JAIME CASTIELLO. Sheed and Ward, New York, 1936. xxiii + 254 pp. $2.50.

During the last fifty years most scientifically minded psychologists have been busy trying to give an accurate, precise description or explanation of mental phenomena. They have looked at man's biological inheritance and his surrounding environment, and have from these two tried to understand his

thoughts and actions. They have left for theologians and philosophers consideration of the more spiritual aspects of man, of his soul.

Direct and unequivocal opposition to this point of view is expressed in this volume of Castiello. The word 'humane' itself stems from the humanism of the Greeks and takes into account the dual nature of man, the material and the spiritual. This book, however, is not especially interested in the material nature of man, but in the spiritual. Thought, for example, is said to be "an immaterial function which stands above matter," (p. 29) and "an immaterial, spiritual urge which is essentially different from and consequently not reducible to any mechanical process or animal activity whatever." (p. 33) It can thus be seen that whatever explanation is given of psychological processes is suffused with this mystery of spirit.

There are chapters on thought, creative power, making of the self, and the principal study courses. Excellent illustrations liberally introduced throughout the book show that the author is more acquainted with theology, philosophy, and literature than with modern experimental psychology. Sometimes even there is a misstatement of a fact. On page 40 occurs this statement: "No psychologist thinks it of the slightest importance whether a boy has an intelligence quotient of 20 or 22. Both numbers signify very good intelligence." Now how could anybody with even an elementary acquaintance with general psychology let such a statement slip into a published treatise? But maybe these matters are only *mint, anise,* or *cumin* and not the weightier matters of the law.

To the psychologist trained to regard scientific, tested facts as having high value such a book seems like a reversion to medieval scholasticism. But, what is truth? May it not be that Link in his turning to religion and Castiello in his humane psychology are opening up old roadways which in recent years have been sadly neglected.

A. M. J.

Mathematics for the Millions. LANCELOT HOGBEN. W. W. Norton & Company. x + 647 pp. $3.75.

This book is the most peculiar combination of the history of mathematics, the practical uses of mathematics, and pure mathematics that has recently been published. It is written for the layman, not for the mathematician. The claim is made for it that anyone with ordinary ability who will take paper and pencil and study this book will be able to work through the material contained in it. This material embraces the elements of arithmetic, algebra, geometry, calculus, statistics, and plane and spherical trigonometry.

There are many unique features about the book. In the first place the author is English and, because of this, one finds many expressions and viewpoints that are flavored by an English setting. This many readers would find intriguing. The rich historical background which has been used to stimulate the reader to want to know something about mathematics, to enrich his store of knowledge, and to give him an insight into the causes for certain phenomena as we find them is a real contribution to the literature in this field. The peculiar ways and devices which have been used to promote an understanding by the reader of those fundamentals of mathematics which are usually thought of as the special province of the college student or university professor are worthy of note. The audacity of the author in leading the reader into mathematical waters which are usually considered troubled or beyond their depths

is unusual. There are many diagrams which are splendid aids to the reader's imagination in developing an understanding of the principles involved. Then too, one finds a bit of humor from time to time which is refreshing.

The book should be read by those who would lay claim to a cultural background of the world of knowledge. It should be read also by the teacher and student of mathematics who desires to enrich his notions of the value of mathematics to mankind and the part it has played in the development of our present state of civilization. The book is a real contribution to the literature of mathematics, and will no doubt do its part in allaying certain criticisms of mathematics which have been prevalent in recent years.

H. F. M.

The Marks of Examiners. Sir Philip Hartog, E. C. Rhodes, Cyril Burt. Macmillan & Co. London. xix + 344 pp. 8s 6d net.

This volume is the fourth of a series of volumes published by The International Institute Examinations Enquiry Committee. The previous reports were: (1) *An English Bibliography of Examinations;* (2) *An Examination of Examinations;* and (3) *Essays on Examinations.* All together, these four volumes report the most thoroughgoing and most extensive investigations of examinations ever undertaken.

The present volume had actual examination papers selected from those normally taken by English pupils at 16 years, 10-12 years, and by students at the college and university levels. These samples had removed from them all marks made by the regular examiners. They were then submitted to examiners whose business it is to evaluate such papers (so much of the progress and promotion of pupils in England depend on examinations that there is a large group of professional examiners). Professional examiners, then, graded these papers. In some cases fifteen of them graded independently the same paper; in others, there were only four or five. The problem was always to discover the amount and direction of the variations in the marks given by different examiners to the same paper.

The results of this investigation are highly confirmatory of the previous studies. Large variations in marks were found among the different examiners. So great were these differences that a generalization is warranted. School marks based on the essay type of examination are highly unreliable and should be thought of as approximations only and not as true values.

A. M. J.

Directed Observation and Supervised Teaching in Secondary Schools. Edward B. Mersereau, Robert A. Davis, and Hubert H. Mills. Farrar and Rinehart, Inc., 1937. 107 pp. $1.00.

This workbook contains fifteen units, as follows: Determining the Goals of Teaching, The Teacher, Setting the Stage for Teaching, Discipline, Lesson Planning, Directing Study, Lesson Assignment, Questions and Questioning, Interest and Attention, Drill, Thought Work, Review, Socialized Procedures, Supplementary Activities, Examinations and Marking. In each, a list of important principles is followed by a set of exercises together with several described cases taken from a variety of high school subjects. The exercises are

intended to serve as bases for conferences with the director of training, the assumption being that the student's observation and practice will be done in cooperating schools.

Although most of the exercises call for reports on lessons observed, an equally important service which they can render is to lead students in self-evaluation as they carry on lessons of their own. Such a book can well be used as a frequent reference by any teacher who still is interested in improving his instructional techniques.

C. E. P.

Recent Stories for Enjoyment. Selected and edited by HOWARD F. SEELY and MARGARET ROLING. Silver Burdett Company, 1937. xii + 359 + xl pp. $1.28.

The editors have based this collection of short stories by writers, most of whom are today still actively engaged in their art, upon two premises: First, that since the short story is a prominent literary form and has certain qualities that make it attractive to readers who lack sufficient power of concentration, at their level of advancement, to sustain interest throughout a full length novel, it should occupy a somewhat larger place in a school reading program; second, that inasmuch as there is at present a wealth of excellent short prose fiction dealing with our own times, it would be unfortunate to confine such reading entirely to the product of the past. They have therefore made collections of large numbers of stories of different types, as humorous, pathetic, character portraits, tales of heroism, or of devotion, and have submitted them to their students over a period of three or four years in order to secure for the final selection, to go within the compass of a single volume, those generally acclaimed as the most interesting. For wider reading, a classified list of many others is added.

Preceding the stories is a letter to students explaining the general characteristics of the short story, and giving suggestions as to how to get the greatest enjoyment out of reading, or writing, one. After each story are a few questions judiciously chosen to stimulate thought. Formal study and drill are here discountenanced as detracting from the primary purpose of reading for enjoyment. A short section supplies biographical notes "About the Authors."

A manual, "Helping Pupils Enjoy Short Stories" (Silver Burdett Company. $.32), gives suggestions for class treatment of a reading unit, and discusses the short story as a form of literature.

C. E. P.

Senior Science. GEO. L. BUSH, THEODORE W. PTACEK, and JOHN KOVATS, JR. American Book Company, 1937. vii + 835 pp. $1.65 net.

This book, by three Cleveland teachers, represents a distinct departure from the usual senior science program. It is intended chiefly for use by the great number of pupils who are not attracted by ordinary college preparatory physics and chemistry, but who often find a real interest in learning how these sciences are applied in doing the work of the world, especially when, in addition, they receive information helpful to them as buyers and consumers. And this is just

what this book does give, in large measure. At the same time, with few formulas and a minimum of technical terminology, it emphasizes the application of many pure scientific principles. It goes much further than the general science texts of the junior high school, and is differentiated from them also by the fact that "its content appeals to the interests of young people approaching maturity and to their higher sense of responsibility."

No laboratory work is included, yet very practical questions and exercises calling for real and profitable investigation are provided with nearly every topic. The main story is told simply and concretely, with interesting "sidelights" upon each unit, that broaden it beyond the limits of the main theme. It is because of the extensive treatment accorded the subject matter that the volume has reached its rather bulky proportions. Yet such treatment adds to its value as a book for reference, apart from class room use.

For the practically minded boy or girl not college-bent this volume furnishes information and training of a decidedly valuable kind which probably should be given greater prominence in our still too academically minded and academically controlled secondary schools. Its authors make the added claim that many students discover, after taking this type of course, an interest to know more about formal physics and chemistry.

The ten units are: Water, Fire, Fuels, Weather and Air, Foods and Medicine, Textiles, Building Materials, Home Equipment, Transportation, Safety. In addition to general unit bibliographies, definite page references of a type quite different from those of ordinary general science texts accompany each unit subdivision.

C. E. P.

Modern Everyday Chemistry. RALPH E. HORTON. D. C. Heath & Co., 1937. viii + 451 pp.

This book departs from the usual type of high school chemistry text. Its aim, as stated by the author, is "to assist anyone who does not propose to be a chemist to *understand* the chemistry of the everyday world." It does not attempt to meet the requirements of the College Entrance Board; yet modern concepts of the atom, the electron, and energy changes are made parts of the explanation of what is going on in the world.

Outstanding are the integration of exposition and experimentation, and the effort to familiarize students with methods of scientific inquiry.

One may perhaps question the plan of attempting, rather artificially it seems to the reviewer, to force all the material covered into five units: Oxidation, Reduction, Fuels and Energy, Water and Its Relation to Chemical Change, Chemistry and Human Affairs. One might also question the inclusion of chapters on Chemistry of Our Bodies and Foods that so nearly duplicate those of an ordinary biology text. Occasionally, also, clearness tends to be sacrificed to brevity.

Several of the later chapters include much in the way of tests of ordinary materials that are fascinating to young people, yet that are relatively isolated from the general chemical story and must be done as it were merely according to the cookbook. Doubtless this manner of work is duplicated every day in the routine duties of countless assistants in commercial laboratories, trained chiefly in manipulation and observation. Similarly, much descriptive material, valuable for reference but of minor importance as regards an understanding of

chemical theory, is included—material interesting and not generally found in standard chemistry texts.

Taken as a whole the book bids fair to accomplish its stated purpose in excellent fashion. No doubt, also, some students will be stimulated by it to go on with a study of the customary college courses.

C. E. P.

Modern-Life Chemistry. FRANK O. KRUH, ROBERT H. CARLETON, and FLOYD F. CARPENTER. J. B. Lippincott Company, 1937. xxv + 734 pp. $1.80.

Unlike the text reviewed above, this stresses the connectedness of the whole chemical story, in the belief that in such connectedness lies the key to true understanding. The way it progresses from theory toward concrete application is best shown by the order of its eleven units: Foundations of Chemistry, Structure of Matter, Solutions and Near-solutions, Chemical Action in Solution, Chemical Equations and Calculations, Sulfur and Its Compounds, The Halogens and the Periodic Classification, The Nitrogen Family, Mineralogy and Chemistry, Metallurgy and Chemistry, Organic Chemistry. It will be noted that the electronic and ionic theories are introduced early, to be used continually thereafter in explanation of what, up to the time they were enunciated, had to remain obscure and fragmentary knowledge.

Despite this early introduction of theory, the book is simply and interestingly written, in a style unusually clear and with the fundamentals, clarified through concrete illustrations, kept definitely before the student as his real goal. In place of the catalogue of metallic elements and their compounds that appeared in so many early texts, this book gives a general grounding in the fundamentals of mineralogy and metallurgy. It contrives to be comprehensive without becoming tedious. More is to be understood than to be memorized.

This will undoubtedly rank among the best of recent chemistry texts. A very comprehensive and excellently prepared workbook by two of the authors appeared some time ago (See review in THE HIGH SCHOOL JOURNAL, Vol. 18, p. 254, Nov. 1935).

C. E. P.

Science In the Elementary School. W. C. CROXTON. McGraw-Hill Book Company, Inc., 1937. xi + 554 pp. $3.00.

A very thorough and comprehensive book. Part I presents excellently the philosophy, aims, and methods, evaluates the research thus far done and calls attention to types of further studies needed. Part II "consists of suggested procedures for carrying out more than one hundred science activities suitable for the elementary school, together with statements of the contributing learnings and the desired outcomes of each activity."

No earnest teacher of science in the elementary school can afford not to become acquainted with this book. Many will wish to keep it close at hand as their most frequently consulted reference. Teachers at secondary level may also find it helpful both for content and for purposes of better orientation.

C. E. P.

Modern School Algebra, First Course. SCHORLING, CLARK AND SMITH. World Book Company, 1935. 464 + xvi pp. $1.36.

This book makes a very gradual and natural approach to the subject of algebra through the formula. It has many features which would aid in making algebra interesting to the pupil and that would help him to answer the question "Why should I study algebra?" Some of these are the history of algebra, interesting excerpts on the place of algebra in modern life and interesting problems. The authors have also very successfully bridged the gap between the arithmetic of the elementary school and algebra. The explanations are so clear and the approach to each new topic is so carefully planned that pupils should find the work from day to day relatively easy.

There are good reviews throughout the book and numerous tests with well chosen problems. There are also throughout the book lists of "easy review exercises", "harder review problems", and "honor work" thus providing for the individual differences of pupils within a class.

The typography in the book is good except that the pages seem a bit crowded. There are a few well chosen pictures that would aid in motivating the work. This is one of the best of the new books on this subject.

H. F. M.

Descriptive Economics for Beginners. ETHEL C. GRAS. Henry Holt and Company, 1936. 555 pp. $1.69.

One's liking for an economics text is usually governed by the degree to which it approaches his own economic ideas. This reviewer will have to admit frankly that Mrs. Gras is too far to the right to produce the kind of a text he would like to place in the hands of his pupils. It romanticizes big business, is unscientifically critical of most of the New Deal recovery efforts, and is extremely conservative in its attitude toward organized labor. In short it might, except for its liberal views on the tariff, have been written by Herbert Hoover and corrected by Calvin Coolidge. For its basic social philosophy it goes back to Herbert Spencer and W. G. Sumner who popularized the idea of "the survival of the fittest."

The book is descriptive as the title indicates. The description deals largely with the processes of production and consumption with little attention to the most important of all problems facing the world today—distribution of wealth. This subject is dismissed "because it is held to belong to a later and more advanced type of work. . . ." As a matter of fact, it is of more interest to high school seniors than some of the other problems if presented with concrete illustrations.

This reviewer does not desire to appear over-critical. Mrs. Gras writes well and interestingly. Her organization from the standpoint of a descriptive treatment is very satisfactory. The introductory part is rather theoretical and academic. However, she bids the abstract farewell in 22 pages; and the remaining nine parts, dealing with what might be called a description of contemporary economic society illuminated with history, goes forward in a lively style. If she were less dogmatic in some places and less romantic in others it might be acceptable to the Democrats as well as to the Republicans. How-

ever, it is unlikely that the book could be revised to satisfy a critical student of the social sciences.

A. K. K.

Junior Home Problems, Junior Clothing, and Junior Foods. KATE KINYON and THOMAS L. HOPKINS. Revised edition. Benjamin H. Sanborn and Company, 1937.

Teachers of home economics, especially those teaching in junior high schools, will welcome the revision of these books. The units are presented well within the range of understanding of this junior group. Activities are suggested at the end of each unit but the approach encourages the use of problems raised by a member of the class as well.

In *Junior Clothing* the units which appeared in the earlier edition have been enlarged and entirely rewritten. Other units have been added to include design in its relation to being well dressed, color in its relation to the individual, and the selection of textiles for wise purchasing.

The use of *Junior Foods* as a text should result in a better understanding of attitudes and habits as they affect the health of the individual, some ability to select food, and a better working knowledge of the processes carried on in the home. Many helpful illustrations are included.

Junior Home Problems, the third book of this series, has been planned for general use as a text book for home economics in the junior high school. The subject matter is organized around problems designed to aid the students in becoming more conscious of their place in the home and more willing to assume their share of its responsibilities. V. M. P.

Consumer Goods. EDWARD REICH and CARLTON JOHN SIELGER. The American Book Company, 1937.

To become a wise consumer is a well recognized objective in the study of home economics. Its importance is evident as one analyzes the part that the wise use of resources plays in the attainment of successful family living. Efficiency of consumption will be realized as each individual member broadens his knowledge and engages in activities which will offer opportunity for judgments to be developed.

Consumer Goods has been written primarily to provide material for instruction in that phase of consumer business education. However, there is much in it that invites correlation with other subjects. Detailed descriptions of material, their processes of manufacture, the different types in use, and the application to which they are put are given of many goods of common use in the home. The methods used in testing the quality of these goods will be of value in forming judgments, and the suggestions for proper care will further aid in becoming a wise consumer.

Teaching devices including questions, glossary, suggested projects, and references are to be found at the end of each chapter. Appropriate and informing illustrations are to be found throughout the book. V. M. P.

Your Clothes and Personality. MILDRED GRAVES RYAN. D. Appleton-Century Company, 1937. $1.72.

The author has succeeded in naming and writing a book which has a personal appeal for the high school girl. The more or less elusive element called personality is introduced into the problem of how to make a good appearance in a way which combines the romantic and the practical.

The presentation is simple with a vocabulary having a picturesque quality which is stimulating. Some of the chapters to tempt the reader are: "What Do We Mean by Personality Clothes?" "What Influence Should Fashion Have?" "What Should You Know as a Consumer?" and "What Beauty Aids Should You Know?" There are discussions accompanied by many interesting up-to-date illustrations.

Not only will the book probably be read from cover to cover, but it will also arouse in the reader a desire to follow the precepts set forth. V. M. P.

Our Environment: The Living Things In It. GEORGE C. WOOD and HARRY A. CARPENTER. Allyn & Bacon, 1938. xii + 980 + 85 pp. $1.47 net.

An ambitious attempt to embody in a very full textbook many of the most up-to-date ideas relating to science teaching. In the main the authors' plans are well carried out. Their chief emphasis is upon *thinking reflectively* upon the materials studied, to the end that the attitudes characteristic of a true scientist will be built up in the student. Biological knowledge is developed as an integrated whole which has interdependent relations with the other sciences. Major generalizations are painstakingly built up inductively through use of a wealth of concrete illustrative material presented in an order well calculated to lead the thought forward stage by stage. This wealth of material and the evident striving of the authors to make everything perfectly simple and clear to readers are two factors that help account for the unusual length of the book.

It is quite clear that the authors believe that "a textbook should not be read, but should be analyzed" and its several parts interrelated during study, for by their frequent interpolation of "vital questions," references to diagrams and their legends, cross references, and the like they have tended to make cursory, uninterrupted reading well-nigh impossible, particularly in the earlier units. Further on, in proportion as the student is assumed to have formed the habit of analytical study, the interruptions become less frequent, though never wholly absent. It is quite probable that in many classes, if due attention and time is given to making use of all the study suggestions and helps the authors provide, some of these latter parts will not be reached for lack of time. One could almost wish, for that reason, that the book were not quite so full as to content; yet on the other hand this fullness is in accord with Morrison's finding that it takes a great deal of "assimilative material" to bring about real mastery of fundamental generalizations. This fullness also, combined with the presence of valuable appendices, adds to the value of the book as a reference work.

A teacher using this book need never be at a loss for thought-provoking study assignments, for in addition to the "vital question" sections and "home workshop problems" scattered through the text and to the general summaries and summaries of key statements at the end of each chapter we find also sections with such headings as the following: "What is now your understanding

of: (several ideas listed)?" "What change has taken place in your attitude of mind toward:—?" "Some problems in reflective thinking." These are usually followed by "some interesting books to read", such lists including books of varied types and of varying difficulty.

On the whole, except perhaps for its excessive length, the book creates a very favorable impression. One thing is to be regretted, namely that perhaps on this very account it has rather more than its full share of first edition errors, many of which should certainly be corrected before it attains wide circulation.

C. E. P.

The South American Handbook. 1938 Edition. H. W. Wilson Company. New York, distributors. $1.00.

The fifteenth annual edition of a handbook which covers Latin America from Mexico and Cuba to Tierra del Fuego, giving a well-rounded picture of each separate republic in a way to cater to the needs of trader, traveler, and student. An excellent source book for students of geography, the social studies, and to a less extent the natural sciences.

C. E. P.

Preface to Teaching. HENRY W. SIMON. Oxford University Press. 1938. 98 pp. $1.50.

A delightfully practical discussion of the art of teaching, written in terms that everyone can understand, and from a very sane viewpoint. Its pages of text are few, their number curtailed still further, so far as the author's own writing is concerned, by reason of a brief foreword by Dr. Abraham Flexner; but each one contains valuable food for reflection, usually coupled with sound advice that is applicable at any grade level of teaching. It is far from dry reading; the student in training as well as the experienced teacher will find his needs considered and ways of meeting them pointed out vividly and often entertainingly.

The author writes straightforwardly of what he knows from personal experience. The phrasing of the two part titles, *What the Job Is*, and *How To Do It*, and of some of the chapter titles, *What a Teacher Should Be Like*, and *How Not To Be a Schoolmarm*, testify to the unassuming forcefulness and clarity of the style. As a frequent source of pleasing and stimulating refreshment for teachers already settled in the routine of service, and as an intimate portrayal to would-be teachers of the sort of situations that lie before them, this little book can well be read and reread.

C. E. P.

A Newspaper Unit for Schools. (Revised and Enlarged). B. J. R. STOLPER. Bureau of Publications, Teachers College, Columbia University. $.35.

"A Newspaper Unit for Schools" is a thirty-two page bulletin prepared primarily for the use of that teacher of high school classes who desires to make his pupils news-conscious. The author worked with the tenth grade level, but the material for this project is so presented that there seems no reason why it should not also be successfully used in the elementary grades.

A definite step by step procedure for completing the unit in six weeks' time, or less, is clearly outlined. Suggested questions and detailed points in the consideration of actual newspapers are calculated from the very beginning to make the class develop an intelligent appreciation of all newspapers, their forms, their contents, and their policies. In due time the group is led to begin preparation for making a class paper; and supposedly by the end of the fifth week, its own publication is really completed. Finally, work for the sixth week is planned for repeated investigation of all available newspapers, this time with emphasis on a philosophical study of each.

Not the least important of items to be considered in evaluating "A Newspaper Unit for Schools" is a bibliography of thirty titles.

C. L. P.

L'Attaque du Moulin. Émile Zola. Edited by Otto F. Bond. D. C. Heath & Co., 1937. 46 pp. Vocabulary, pp. 47-59. $.28.

This little cloth-bound volume is Book V in the Bond's Graded French Readers Series.

With this story, which gives something over 200 new words, the total reading vocabulary of the series runs to some 1200 words. In addition, the pupil has had 200 idiomatic expressions and 150 irregular verb forms.

This delightful story has been retold and edited by Dr. Bond in such a manner as to be easily understood by those pupils who have read the previous volumes in the series.

H. G.

Nouvelles Causeries en France. E. E. Pattou. D. C. Heath & Co. 1938. 200 pp. $1.00.

This is a thoroughly revised edition of the earlier "Causeries en France" by the same author. It is an up-to-date conversation book, particularly well adapted to the tourist. The vocabulary is brought up to the minute, even to "sit-down strikes," "air conditioning" and "trailer."

As in the earlier edition the French is on one page and the equivalent English on the opposite page. This is a very convenient arrangement for one not too well versed in the French.

If you want to know how to say it in up-to-date French get this book.

H. G.

Vacabulary Drill Book. Otto F. Bond. D. C. Heath & Co. 1937. 27 pp. $.28.

This book, as its title indicates, is for use in drill on the vocabulary of the five books in the First Series of Graded French Readers.

There are numerous good devices for drilling the vocabulary, such as choosing synonyms, antonyms, derivatives, similar forms, verb work, translation, etc. At the end of the book there is a good self-scoring vocabulary test. For rather rapid and helpful drill on the vocabulary of the series this book is highly recommended.

H. G.

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